AMENDMENTS TO THE CLAIMS:

Claims 1-19 (Canceled)

20. (New) An isolated nucleic acid molecule encoding a delta 12-fatty acid epoxygenase enzyme comprising a member selected from the group consisting of:

(a) the nucleic acid molecule having the sequence of SEQ ID NO:1; and

(b) the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity.

21. (New) The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule encodes a protein having at least 95% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity.

22. (New) The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule encodes a protein having at least 98% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity.

23. (New) The isolated nucleic acid molecule according to claim 20 having the nucleotide sequence of SEQ ID NO:1.

24. (New) The isolated nucleic acid of claim 23 encoding a polypeptide having the sequence of SEQ ID NO:2.

25. (New) A chimeric gene comprising the isolated nucleic acid molecule of claim 20 operably linked to at least one regulatory sequence that allows the expression of the nucleic acid in a host cell.

26. (New) The chimeric gene according to claim 25 wherein the at least one regulatory sequence allows expression of the nucleic acid in a bacterial, fungal insect or plant seed cell.

27. (New) The chimeric construct according to claim 25 wherein the at least one regulatory sequence is the phaseolin promoter.

28. (New) A vector comprising the chimeric construct according to claim 25.

29. (New) An isolated host cell comprising:

(a) an isolated nucleic acid molecule having the sequence of SEQ ID NO:1;

(b) the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the complement in the host cell;

(c) a vector comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO:1, or

(d) a vector comprising the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the s equence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the complement in a host cell.

30. (New) The host cell of claim 30 wherein the host cell is selected from the group consisting of yeast, bacteria, insect and plant seed cells.

31. (New) A transgenic plant seed cell comprising:

(a) a chimeric gene comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO:1;

(b) the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the complement in a host cell;

(c) a vector comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO:1, or

(d) a vector comprising the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the complement in a host cell.

32. (New) A method for producing delta-12 epoxy fatty acids which comprises:

(i) transforming a host cell with a chimeric construct comprising:

(a) a chimeric gene comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO:1;

(b) the complement of an isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the nucleic acid in a host cell,

(c) a vector comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO:1; or

(d) the vector comprising the complement of an isolated nucleic acid molecule which hybridizes under high stringency conditions to a nucleotide sequence having the sequence of SEQ ID NO:1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and

wherein said protein has epoxygenase activity, and at least one regulator sequence that allows the expression of the nucleic acid in a host cell; and

(ii) growing the transformed host cells of step (i) under conditions that are suitable for expression of the nucleic acid molecule encoding the delta 12-epoxygenase, wherein the expression results in production of altered levels of fatty acid modifying enzyme in the transformed host cell.

33. (New) The method of claim 32 in which the cell is a plant seed cell.

34. (New) The method according to claim 33 comprising the additional step of

(iii) regenerating the cell obtained by step (ii) into a plant.

35. (New) A method for producing a delta 12-epoxygenarese enzyme comprising the following steps:

(i) transforming a microbial, yeast, or plant seed cell with a chimeric gene comprising an isolated nucleic acid molecule having the sequence of SEQ ID NO: 1 or the complement of an isolated nucleic acid molecule which hybridizes under stringent conditions to a nucleotide sequence having the sequence of SEQ ID No. 1, wherein said nucleic acid molecule encodes a protein having at least 90% identity to SEQ ID NO:2 and wherein said protein has epoxygenase activity, and at least one regulatory sequence that allows the expression of the nucleic acid in a host cell;

(ii) growing the transformed cells obtained from step (i) under conditions that results in expression of the delta 12-epoxygenase enzyme.

36. (New) The method of claim 38 wherein the isolated nucleic acid encodes a *Stokesia laevis* delta 12-epoxygenase enzyme.

DECLARATIONs UNDER 37 C.F.R. § 1.132

The attached sheets include declarations by co-inventors Dr. David Hildebrand and Dr. Tomoko Hatanaka stating that experiments on yeast and plant host cells were performed under Dr. Hildebrand's supervision and epoxy fatty acid formation was observed in cells transformed with the *Stokesia Laevis* delta 12-epoxygenase gene, as shown in the enclosed article "Expression of a *Stokesia laevis* epoxygenase gene", Phytochemistry (2004) pages 1-8.